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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,424	03/18/2005	Masatoshi Hada	05021	4913

23338 7590 11/28/2006

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EXAMINER

LUONG, VINH

ART UNIT PAPER NUMBER

3682

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/528,424

Applicant(s)

HADA ET AL.

Examiner

Vinh T. Luong

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.



Vinh T. Luong
Primary Examiner

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/7/06 & 3/18/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: Attachment.

1. The drawings are objected to because of the reasons, among other things, listed below:

(a) The drawings are not in compliance with 37 CFR 1.84. For example, the sectional plane "X-X" in Fig. 14 should have been changed to "3-3" in order to correspond to Fig. 3. See 37 CFR 1.84(h)(3). Another example, the same reference character must never be used to designate different parts. See 37 CFR 1.84(p)(3). In the instant case, the same reference character S2 is used to designate different parts, i.e., the non-contacting part of the plate 3 and the non-contacting part of the reinforcement 6; and

(b) The drawings are inconsistent with the specification. For example, paragraphs [0004]-[0012] and [0033]-[0038] of the specification describe that Figs. 13, 14, etc. show prior art flywheel, however, Applicant did not label these figures as prior art. See MPEP 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The disclosure is objected to because of the following informalities:

(a) In the Brief Description of the Drawings, the sectional line, e.g., "X-X" should have been changed to "3-3" in order to correspond to Fig. 3. See 37 CFR 1.84(h)(3);

(b) The same reference character must never be used to designate different parts. See 37 CFR 1.84(p)(3). In the instant case, the same reference character S2 is used to designate different parts, i.e., the non-contacting part of the plate 3 and the non-contacting part of the reinforcement 6. See, e.g., claims 2 and 3. Applicant is respectfully suggested to distinguish the contacting parts in claims 2 and 3 by changing "S2" to "S2" and "S3"; and

(c) The specification is inconsistent with the drawings. For example, paragraphs [0004]-[0012] and [0033]-[0038] of the specification describe that Figs. 13, 14, etc. show prior art flywheel, however, Applicant did not label these figures as prior art. See MPEP 608.02(g).

Appropriate correction is required.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "thin" and "substantially" in claims 1 and 2 are relative terms which render the claims indefinite. The terms "thin" and "substantially" are not defined by the claims, the

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specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear, e.g., what size or dimension of the plate portion is required so that the plate portion is considered to be "a thin plate portion."

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-3, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Doman (US Patent No. 6,131,486 cited as reference X in Supplementary European Search Report submitted by Applicant).

Regarding claim 1, Doman teaches a flywheel 1 in which a central part 4b, 4d of a thin plate portion 4 having a flywheel mass 5 provided on an outer peripheral side of the plate portion 4 is joined to an end surface (unnumbered. See Attachment or "Att.") of a crankshaft 3, 3a through a plurality of bolts 6 disposed annularly at intervals (Fig. 2), characterized in that, within a contact zone (S1 in Figs. 1 and 2 of Att.) of a substantially polygon (Fig. 3 of Att.) defined by

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linking each center of the bolts 6 with straight lines excluding the bearing surfaces of the bolts 6, the plate portion 4 has a non-contacting part (S2 in Figs. 1 and 2 of Att.) set not to contact with the end surface of the crankshaft 3, 3a, and the area of the non-contacting part (S2) is set to be a determined percentage of the whole area of the contact zone (S1).

In summary, Doman teaches general conditions of claim 1. Doman does not explicitly teach the claimed range of 40% to 75% of the ratio defined by the area of the non-contacting part and the whole area of the contact zone. However, it is well settled that “[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 105 USPQ 233, 235 (CCPA 1955) cited in MPEP 2144.05.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform routine experimentation to discover the range of 40% to 75% of the ratio defined by Doman’s area of the non-contacting part and the whole area of the contact zone in order to optimize the absorption of flexural vibration from the crankshaft as implicitly taught or suggested by Doman. See Doman’s Summary of the Invention.

Regarding claim 2, Doman teaches a flywheel 1 in which a central part 31 (Figs. 3-5. See column 5, line 54+) of a thin plate portion 30 having a flywheel mass 5 (Fig. 1) provided on an outer peripheral side of the plate portion 30 is clamped between a reinforcement 40 and an end surface of a crank shaft 3, 3a (Fig. 1, Att.) and is joined thereto through a plurality of bolts 6 disposed annularly at intervals, characterized in that, within a contact zone (S1 in Fig. 3 of Att.) of a substantially polygon (Fig. 3, Att.) defined by linking each center of the bolts 6 with straight lines excluding the bearing surfaces of the bolts 6, the reinforcement 40 has a non-contacting part

(S2 in Figs. 3 and 4 of Att.) set not to contact with the plate portion 30, and the area of the non-contacting part (S2) is set to be a determined percentage of the whole area of the contact zone.

In summary, Doman teaches general conditions of claim 1. Doman does not explicitly teach the claimed range of 40% to 75% of the ratio defined by the area of the non-contacting part and the whole area of the contact zone. However, it is well settled that “[w]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller, supra*.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to perform routine experimentation to discover the range of 40% to 75% of the ratio defined by Doman's area of the non-contacting part and the whole area of the contact zone in order to optimize the absorption of flexural vibration from the crankshaft as implicitly taught or suggested by Doman. See Doman's Summary of the Invention.

Regarding claim 3, the plate portion 30 is provided with a non-contacting part (at 31a in Fig. 4 of Att.) that does not contact with the end surface (Fig. 1 of Att.) of the crankshaft 3, 3a.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kono et al. (plate 2 in Fig. 3), Rediker (plate 11), Inglis (plate 10, 60, 80, etc.), Matsuoka et al. (plate 10), Schiefer (Figs. 1 and 2), Booth (plate 10), and Bevc et al. (Figs. 1-9).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinh T. Luong whose telephone number is 571-272-7109. The examiner can normally be reached on Monday - Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Luong

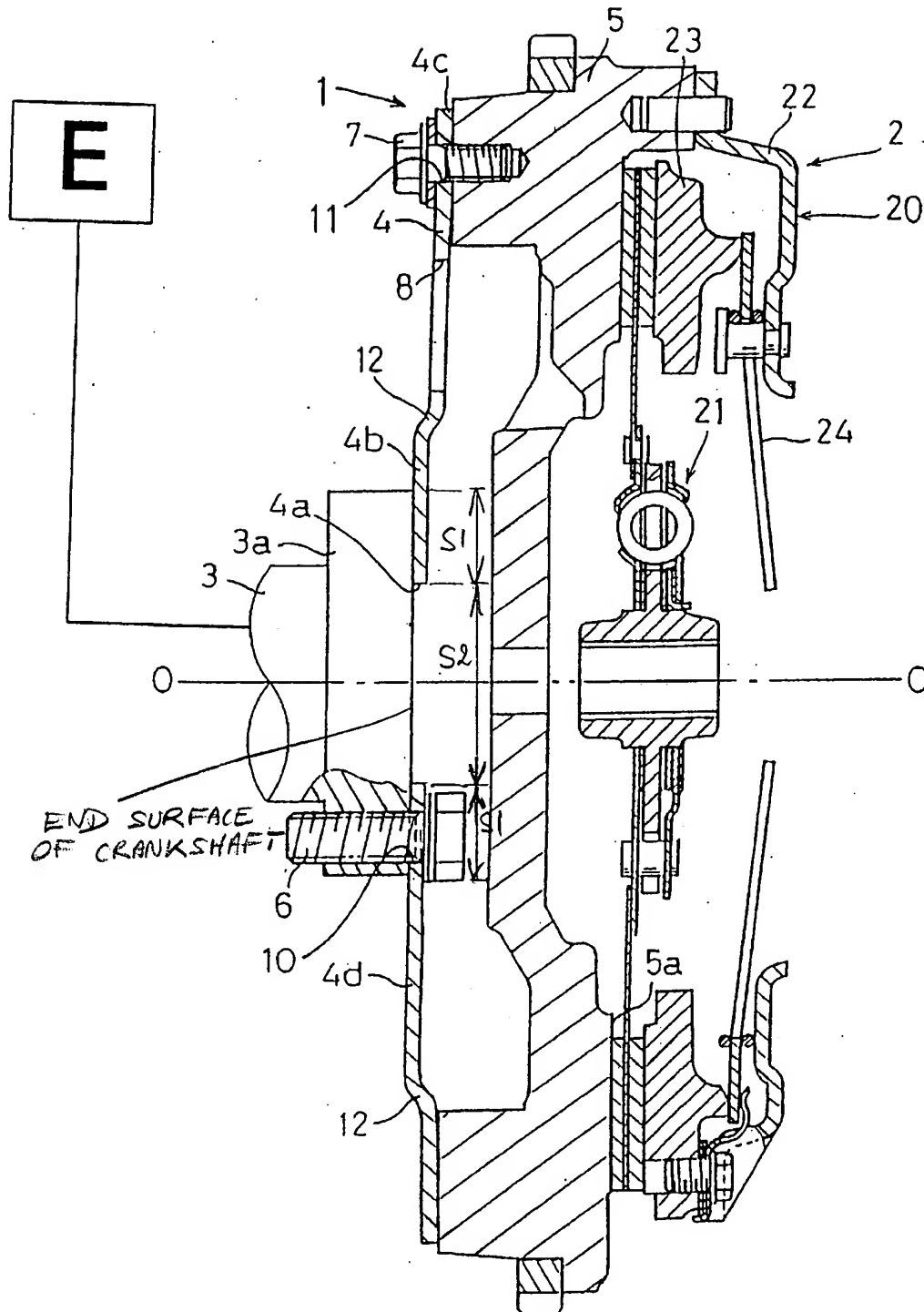
November 21, 2006



Vinh T. Luong
Primary Examiner

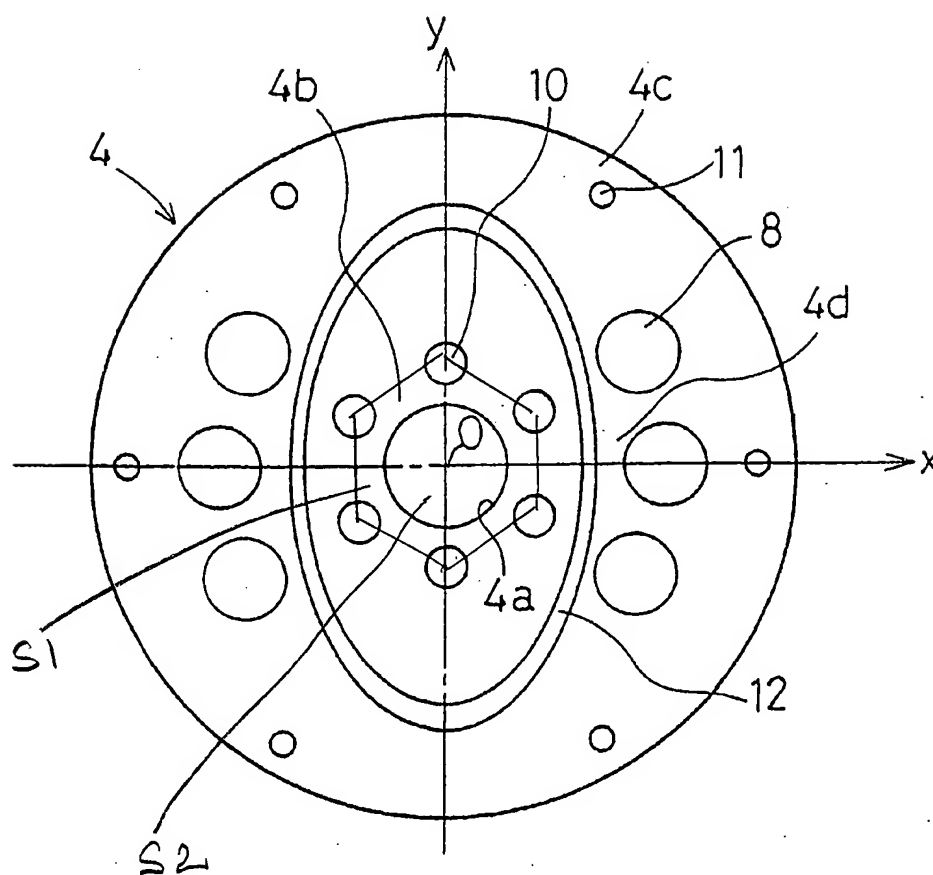
ATTACHMENT

Fig. 1



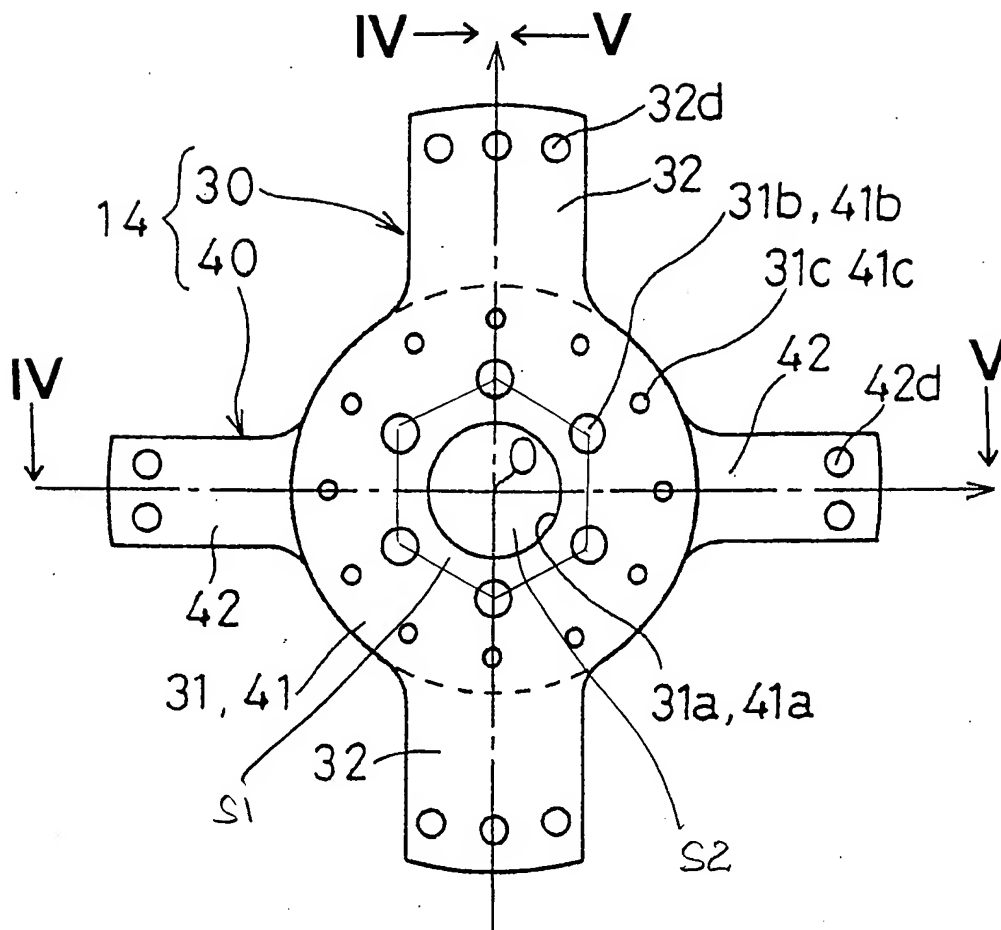
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Fig. 2



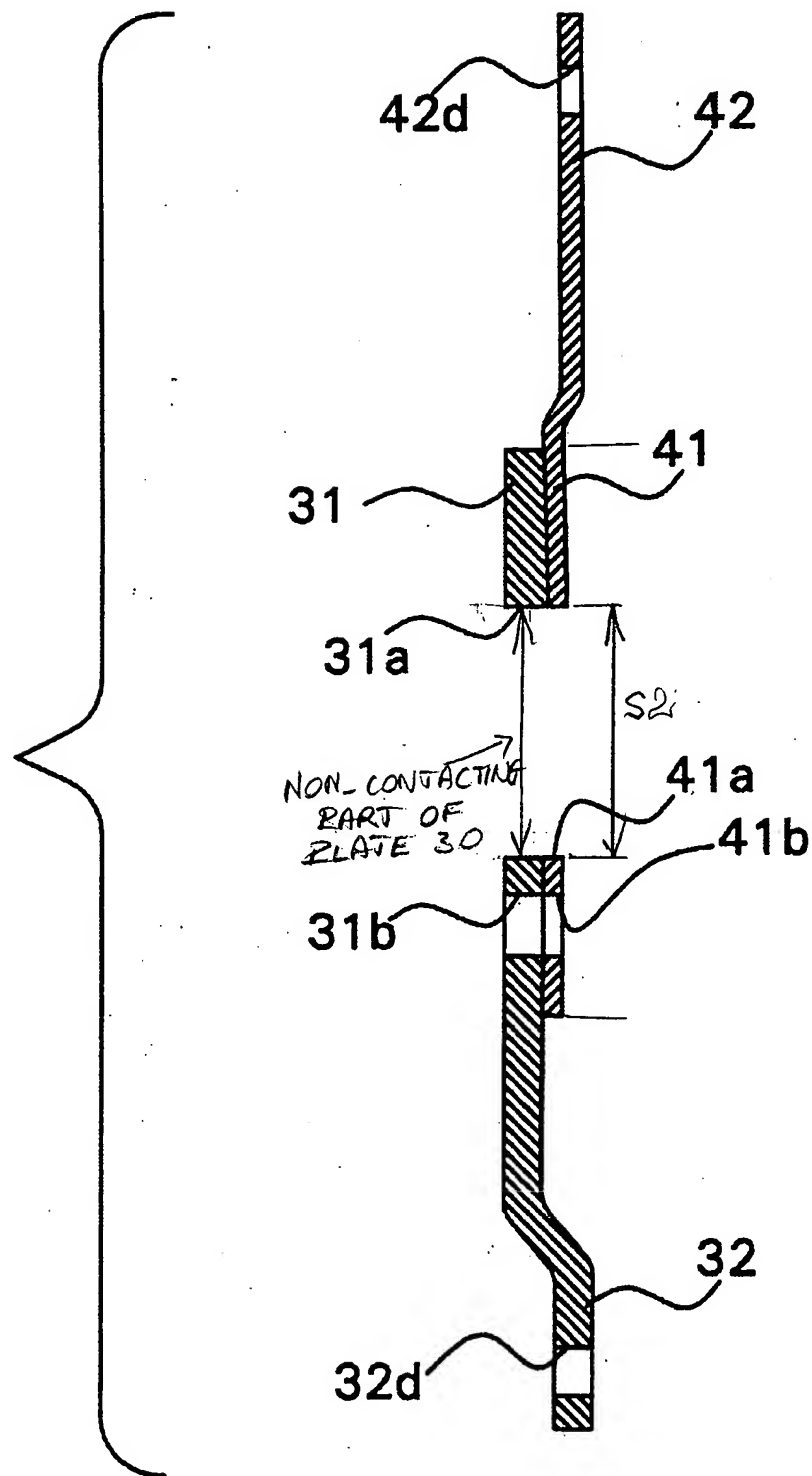
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Fig. 3



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Fig. 4



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